IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Steve Beaudin et al.
Serial No. 10/811,164
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Examiner: Andrew Wendell
Art Unit: 2618

Mail Stop Appeal Brief – Patents
Commissioner for Patents
PO Box 1450
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Sir:

An **APPEAL BRIEF** is filed herewith. The Appellants enclose a payment in the amount of $1030.00 as required by 37 C.F.R. § 1.17(c) to cover the fees associated with this Appeal Brief and with a Two-month Extension of Time. If any additional fees are required in association with this appeal brief, the Director is hereby authorized to charge them to Deposit Account 14-1315, and consider this a petition therefor.

APPEAL BRIEF

(1) REAL PARTY IN INTEREST

The real party in interest is the assignee of record, i.e., Nortel Networks Limited of 2351 Boulevard Alfred-Nobel, St. Laurent, Quebec Canada H4S 2A9, which is wholly owned by Nortel Networks Corporation, a Canadian corporation.

(2) RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences to the best of the Appellants' knowledge.

(3) STATUS OF CLAIMS

Claims 1-31 were rejected with the rejection made final on September 12, 2008.

Claims 1-31 are pending and are the subject of this appeal.

(4) STATUS OF AMENDMENTS

All amendments have been entered to the best of the Appellants' knowledge. No amendments have been filed after the Final Office Action mailed September 12, 2008.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

In the following summary, the Appellants have noted where in the Specification certain subject matter exists. The Appellants wish to point out that these citations are for demonstrative purposes only and that the Specification may include additional discussion of the various elements, citations to which are not pointed out below. Thus, the noted citations are in no way intended to limit the scope of the pending claims.

Independent claim 1 recites a method for combining signals for transmission between masthead electronics (Specification, paragraph 0016; see also Figure 1, element 20) and base housing electronics (Specification, paragraph 0016; see also Figure 1, element 18) in a base station environment (Specification, paragraph 0016; see also Figure 1, element 10), the method comprising:

a) receiving a first receive signal centered about a first center frequency from a first antenna (Specification, paragraphs 0017 and 0018; see also Figure 2, element 22M);

b) receiving a second receive signal that is different from the first receive signal and centered about the first center frequency from a second antenna (Specification, paragraphs 0017-0019; see also Figure 2, element 22D);

c) translating the first receive signal from the first antenna to being centered about a second center frequency (Specification, paragraph 0018); and

d) combining the first receive signal centered about the second center frequency and the second receive signal to form a composite signal (Specification, paragraph 0021), which is sent to the base housing electronics over a feeder cable (Specification, paragraphs 0016 and 0021; see also Figure 1, element 24; and Figure 2).

Claim 3, which ultimately depends from claim 1, recites that the first center frequency and the second center frequency are sufficiently spread to minimize interference between the first and second receive signals in the composite signal (Specification, paragraphs 0019 and 0020; see also Figure 3).

Claim 7, which depends from claim 1, recites that a plurality of receive signals, including the second receive signal, are received and translated to being centered about different center frequencies (Specification, paragraphs 0018, 0019, and 0021) and combined to form the composite signal (Specification, paragraph 0021).

Independent claim 16 recites base station electronics (Specification, paragraph 0016; see also Figure 1, element 20) for combining signals for transmission between a masthead (Specification, paragraph 0016; see also Figure 1, element 16) and a base housing (Specification, paragraph 0016; see also Figure 1, element 12) in a base station environment (Specification, paragraph 0016; see also Figure 1, element 10), the base station electronics comprising in the masthead:

a) a first input (Specification, paragraph 0018; see also Figure 2, element 28) adapted to receive a first receive signal centered about a first center frequency from a first antenna (Specification, paragraphs 0017 and 0018; see also Figure 2, element 22M);

b) a second input (Specification, paragraph 0019; see also Figure 2, element 34) adapted to receive a second receive signal that is different from the first receive signal and centered about the first center frequency from a second antenna (Specification, paragraphs 0017-0019; see also Figure 2, element 22D);

c) first translation circuitry (Specification, paragraph 0018; see also Figure 2, element 32) adapted to translate the first receive signal from the first antenna to being centered about a second center frequency (Specification, paragraph 0018); and

d) combining circuitry (Specification, paragraph 0021; see also Figure 2, element 40) adapted to combine the first receive signal centered about the second center frequency and the second receive signal to form a composite signal (Specification, paragraph 0021), which is sent to base housing electronics (Specification, paragraph 0016; see also Figure 1, element 18) over a feeder cable (Specification, paragraphs 0016 and 0021; see also Figure 1, element 24; and Figure 2).

Claim 18, which ultimately depends from claim 16, recites that the first center frequency and the second center frequency are sufficiently spread to minimize interference between the first and second receive signals in the composite signal (Specification, paragraphs 0019 and 0020; see also Figure 3).

Claim 22, which depends from claim 16, recites that a plurality of receive signals, including the second receive signal, are received and translated to being centered about different center frequencies (Specification, paragraphs 0018, 0019, and 0021) and combined to form the composite signal (Specification, paragraph 0021).

Independent claim 31 recites a system for combining signals for transmission between masthead electronics (Specification, paragraph 0016; see also Figure 1, element 20) and base housing electronics (Specification, paragraph 0016; see also Figure 1, element 18) in a base station environment (Specification, paragraph 0016; see also Figure 1, element 10), the method comprising:

a) means (Specification, paragraph 0018; see also Figure 2, element 28) for receiving a first receive signal centered about a first center frequency from a first antenna (Specification, paragraphs 0017 and 0018; see also Figure 2, element 22M);

b) means (Specification, paragraph 0019; see also Figure 2, element 34) for receiving a second receive signal that is different from the first receive signal and centered about the first center frequency from a second antenna (Specification, paragraphs 0017-0019; see also Figure 2, element 22D);

c) means (Specification, paragraph 0018; see also Figure 2, element 32) for translating the first receive signal from the first antenna to being centered about a second center frequency (Specification, paragraph 0018); and

d) means (Specification, paragraph 0021; see also Figure 2, element 40) for combining the first receive signal centered about the second center frequency and the second receive signal to form a composite signal (Specification, paragraph 0021), which is sent to the base housing electronics over a feeder cable (Specification, paragraphs 0016 and 0021; see also Figure 1, element 24; and Figure 2).

(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether claims 1-31 were properly rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claim 12 of U.S. Patent No. 7,181,243 B1 to *Nicholls et al.* (hereinafter "*Nicholls*") in view of U.S. Patent Application Publication No. 2004/0266356 A1 to *Javor et al.* (hereinafter "*Javor*").

B. Whether claims 1-3, 6, 7, 11-13, 16-18, 21, 22, 26-28, and 31 were properly rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,125,109 to *Fuerter* (hereinafter "*Fuerter*") in view of U.S. Patent No. 7,069,051 B1 to *Katz* (hereinafter "*Katz*") and further in view of U.S. Patent Application Publication No. 2003/0148747 A1 to *Yamamoto* (hereinafter "*Yamamoto*") and *Javor*.

(7) ARGUMENT

A. Introduction

The Patent Office has not shown where all the elements of the pending claims are shown in the prior art with sufficient particularity to sustain an obviousness rejection. In particular, the Patent Office has not shown where the prior art discloses the feature of receiving a second receive signal different from a first receive signal from a second antenna where the first and second receive signals are centered about a first center frequency. Furthermore, as will be detailed below, the Patent Office has not established how the prior art discloses all the features recited in the dependent claims. As such, the Appellants request that the Board reverse the Examiner and instruct the Examiner to allow the claims for these reasons along with the reasons noted below.

B. Summary Of References

1. U.S. Patent No. 7,181,243 To *Nicholls*

Nicholls provides a serrodyne architecture capable of operating at high frequencies.[1] The architecture disclosed in *Nicholls* includes a coupler, a delay line, and a switching system.[2] The delay line is coupled to a reflective port of the coupler.[3] The switching system is coupled to the delay line at different points and is configured to selectively shunt those points on the delay line to change the effective electrical length of the delay line.[4] The effective electrical length is changed throughout the period, corresponding to the amount the frequency of the input signal is shifted.[5] In operation, an input signal is provided to an input port of the coupler, and an output signal is provided at the output port, wherein the input signal and the output signal vary by a translation frequency, which is controlled based on how the effective electrical length of the delay line is changed.[6]

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[1] *See Nicholls*, Abstract.
[2] *Ibid.*
[3] *Ibid.*
[4] *Ibid.*
[5] *Ibid.*
[6] *Ibid.*

2. U.S. Patent Application Publication No. 2004/0266356 A1 To *Javor*

Javor discloses a wireless communication device 10 having multiple antennas 30 and 130.[7] The antennas may be configured to provide radiation pattern diversity or antenna diversity.[8] When the antennas are configured to provide radiation pattern diversity, the antenna 30 is an omnidirectional antenna and the antenna 130 is a directive antenna.[9] When the antennas are configured to provide antenna diversity the antennas 30 and 130 are separated a predetermined distance from each other.[10] Nevertheless, *Javor* does not disclose or suggest receiving a second receive signal different from a first receive signal from a second antenna where the first and second receive signals are centered about a first center frequency.

3. U.S. Patent No. 6,125,109 To *Fuerter*

Fuerter discloses a signal delay and combining technique that provides signal gain diversity within a CDMA repeater.[11] In particular, *Fuerter* discloses a rake receiver 34 having antennas 16a-16n and demodulators 36.[12] According to *Fuerter*, the antennas 16a-16n receive a signal 12 having portions that include different amplitudes due to propagation effects and decorrelation effects.[13] According to *Fuerter*, the signals are all still part of a single signal and are not two separate signals. However, *Fuerter* does not disclose or suggest receiving a second receive signal different from a first receive signal from a second antenna where the first and second receive signals are centered about a first center frequency.

4. U.S. Patent No. 7,069,051 B1 To *Katz*

Katz discloses a radio system containing a subscriber terminal and a base station that transmits signals to the subscriber terminal.[14] The subscriber terminal determines a quality of signals received from the base station based on whether the signal exceeds a threshold and sends information on the antenna that sent the signal that exceeded the threshold back to the base

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[7] *See Javor*, paragraphs **[0008]** and **[0009]**.
[8] *Id.* at paragraphs **[0020]** and **[0021]**.
[9] *Id.* at paragraph **[0020]**.
[10] *Id.* at paragraph **[0021]**.
[11] *See Fuerter*, col. 2, ll. 24-26.
[12] *Id.* at Figure 2; and col. 4, ll. 27-28.
[13] *Id.* at col. 3, ll. 13-28.
[14] *See Katz*, col. 10, ll. 17-20.

station.[15] The base station then continues to transmit signals to the subscriber terminal from the antenna that exceeded the threshold.[16] Furthermore, the base station contains amplifiers that amplify signals before the signals are transmitted.[17] However, *Katz* does not disclose or suggest receiving a second receive signal different from a first receive signal from a second antenna where the first and second receive signals are centered about a first center frequency.

5. U.S. Patent Application Publication No. 2003/0148747 A1 To *Yamamoto*

Yamamoto relates to a radio base station that sets the gain on an input signal.[18] The radio base station contains a mast head amplifier and a base station receiver.[19] The mast head amplifier selects for output either a first signal received from a terminating set or a second signal received from an antenna.[20] The base station receiver receives either the first signal or the second signal in order to adjust an intensity of an output signal.[21] Nonetheless, *Yamamoto* does not disclose or suggest receiving a second receive signal different from a first receive signal from a second antenna where the first and second receive signals are centered about a first center frequency.

C. Legal Standards For Establishing Obviousness

Section 103(a) of the Patent Act provides the statutory basis for an obviousness rejection and reads as follows:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Courts have interpreted 35 U.S.C. § 103(a) as a question of law based on underlying facts. As the Federal Circuit stated:

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[15] *See Katz*, col. 10, ll. 21-28.
[16] *Id.* at col. 10. ll. 31-34.
[17] *Id.* at col. 10, ll. 39-40.
[18] *See Yamamoto*, paragraph **[0002]**.
[19] *Id.* at page 5, col. 2, ll. 43-48.
[20] *Id.* at page 5, col. 2, ll. 44-47.
[21] *Id.* at page 5, col. 2, ll. 48-52.

> Obviousness is ultimately a determination of law based on underlying determinations of fact. These underlying factual determinations include: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) the extent of any proffered objective indicia of nonobviousness.[22]

Once the scope of the prior art is ascertained, the content of the prior art must be properly combined. "Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demand known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.[23] ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness")."[24]

Some elements may be inherent within the reference. "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.'"[25] "The mere fact that a certain thing may result from a given set of circumstances is not sufficient."[26] Thus, the possibility that an element may be derived from the reference is insufficient to establish that said element is inherent to the reference.

Whether an element is implicitly or explicitly taught by a reference or combination of references is open to interpretation. While the Patent Office is entitled to give claim terms their broadest reasonable interpretation, this interpretation is limited by a number of factors. First, the interpretation must be consistent with the specification.[27] Second, the broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.[28] Finally, the interpretation must be reasonable.[29] This means that the words of

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[22] *Monarch Knitting Mach. Corp. v. Sulzer Morat GmBH*, 45 U.S.P.Q.2d (BNA) 1977, 1981 (Fed. Cir. 1998) (internal citations omitted).
[23] See *In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006)
[24] *KSR Int'l v. Teleflex, Inc.*, No. 04-1350, slip op. at 14 (U.S., Apr. 30, 2007).
[25] *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (quoting *Cont'l Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991)).
[26] *Ibid.* (citation and quotation omitted).
[27] *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000); MPEP § 2111.
[28] *In re Cortright*, 165 F.3d 1353, 1359, (Fed. Cir. 1999); MPEP § 2111.
[29] *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1369 (Fed. Cir. 2004); MPEP § 2111.01.

the claim must be given their plain meaning unless applicant has provided a clear definition in the specification.[30]

If a claim element is missing after the combination is made, then the combination does not render obvious the claimed invention, and the claims are allowable. As stated by the Federal Circuit, "[if] the PTO fails to meet this burden, then the applicant is entitled to the patent."[31]

D. Claim 1-31 Are Patentable Over *Javor*

Claims 1-31 were rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claim 12 of *Nicholls* in view of *Javor*. The Appellants submit that when an indication is allowability is received in the present application, the Appellants will file a terminal disclaimer in order to overcome the non-statutory obviousness-type double patenting.

E. Claims 1-3, 6, 7, 11-13, 16-18, 21, 22, 26-28, And 31 Are Patentable Over *Fuerter* In View Of *Katz*, *Yamamoto*, And *Javor*

Claims 1-3, 6, 7, 11-13, 16-18, 21, 22, 26-28, and 31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Fuerter* in view of *Katz* and further in view of *Yamamoto* and *Javor*. The Appellants respectfully traverse the rejections.

1. None Of The References, Either Alone Or In Combination, Disclose Or Suggest Receiving A Second Receive Signal Different From A First Receive Signal From A Second Antenna Where The First And Second Receive Signals Are Centered About A First Center Frequency As Recited In Claims 1, 16, And 31

When rejecting a claim under 35 U.S.C. § 103, the Patent Office must either show that the prior art references teach or suggest all limitations of the claim or explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art.[32] The gap between the prior art and the claimed invention may not be

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[30] *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989).
[31] *In re Glaug*, 283 F.3d 1335, 1338 (Fed. Cir. 2002).
[32] Examination Guidelines for Determining Obviousness Under 35 U.S.C. § 103 in View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*, published in the Federal Register, Vol. 72, No. 195, pages 57526-57535.

"so great as to render the [claim] nonobvious to one reasonably skilled in the art."[33] Here, the Patent Office has failed to show where each and every limitation of the claims is taught or suggested by the prior art. Further, for those limitations of the claims that are not taught or suggested by the prior art, the Patent Office has failed to explain why those limitations would have been obvious to one of ordinary skill in the art. More specifically, claim 1 recites a method for combining signals comprising, among other features, "receiving a second receive signal that is different from the first receive signal and centered about the first center frequency" where the first receive signal is centered about the first center frequency. Claims 16 and 31 include similar features. The Appellants submit that none of the references, either alone or in combination, disclose or suggest receiving a second receive signal different from a first receive signal from a second antenna where the first and second receive signals are centered about a first center frequency.

As correctly pointed out by the Patent Office, *Fuerter*, *Katz*, and *Yamamoto* do not disclose this feature.[34] Similarly, *Javor* does not disclose this feature. Nevertheless, the Patent Office supports the rejection by stating that claim 14 of *Javor* discloses receiving a second receive signal different from a first receive signal from a second antenna, where the first and second receive signals are centered about a first center frequency.[35] The Appellants respectfully disagree. While claim 14 of *Javor* does disclose receiving a second signal different from a first signal, the cited portion does not disclose that the first and second signals are centered about a first center frequency.[36] Moreover, the Appellants have reviewed the remaining portions of *Javor* and submit that nowhere does *Javor* disclose or even suggest this feature. Instead, *Javor* discloses antennas 30 and 130, where the antenna 30 is an omnidirectional antenna and the antenna 130 is a directive antenna.

The Patent Office also argues that "*Fuerter* teaches a second receive signal centered about the first center frequency (see rejection for further explanation). *Javor* is used in combination with *Fuerter* to clearly teach a second receive signal being different from the first receive signal."[37] The Appellants respectfully disagree that *Fuerter* discloses a second receive signal centered about the same center frequency as a first receive signal. Instead, *Fuerter*

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[33] *Dann v. Johnston*, 425 U.S. 219, 230, 189 U.S.P.Q. (BNA) 257, 261 (1976).
[34] *See* Final Office Action mailed September 12, 2008, page 10.
[35] *Ibid.*
[36] *See Javor*, page 4, ll. 21-22.
[37] *See* Office Action mailed March 6, 2008, page 12.

discloses that antennas 16a-16n receive the same signal 12.[38] At the very most, *Fuerter* discloses that the signal 12 consists of signals 12a-12n.[39] However, the signals 12a-12n are still part of the same signal and only differ in that they have different amplitudes due to propagation effects and decorrelation effects.[40] Nevertheless, the signals are all still part of a single signal. Thus, *Fuerter* cannot disclose two separate and distinct receive signals, which are centered about the same center frequency. Similarly, *Javor* does not disclose this feature. Instead, as discussed above, *Javor* only discloses receiving a second signal, which is different from a first signal. As such, claims 1, 16, and 31 are patentable over the cited references. Likewise, claims 2, 6, 11-13, 17, 21, and 26-28, which variously depend from claims 1 and 16, are patentable for at least the same reasons along with the novel features recited therein.

2. None Of The References, Either Alone Or In Combination, Disclose Or Suggest First And Second Frequencies That Are Spread To Minimize Interference Between First And Second Receive Signals In A Composite Signal As Recited In Claims 3 And 18

Claim 3, which depends from claim 1, recites that "the first center frequency and the second center frequency are sufficiently spread to minimize interference between the first and second receive signals in the composite signal." Claim 18, which depends from claim 16, includes similar features. The Appellants submit that none of the references, either alone or in combination, disclose or suggest first and second frequencies that are spread to minimize interference between first and second receive signals in a composite signal. The Patent Office supports the rejection by asserting that *Fuerter* discloses this feature in Figure 2.[41] In particular, the Patent Office refers to signals 16a-16n in maintaining the rejection.[42] The Appellants respectfully disagree for a number of reasons. First, the elements in *Fuerter* denoted by reference numerals 16a-16n are not receive signals. Instead, the elements denoted by reference numerals 16a-16n refer to receiver antennas.[43] Second, while the antennas 16a-16n do receive signals, the antennas 16a-16n receive the signal 12.[44] However, no mention is made about a first center frequency and a second center frequency, much less spreading a first center frequency and

[38] *See Fuerter*, col. 3, ll. 16-18.
[39] *Id.* at col. 3, ll. 24-25.
[40] *Id.* at col. 3, ll. 13-28.
[41] *See* Final Office Action mailed September 12, 2008, page 11.
[42] *Ibid.*
[43] *See Fuerter*, Figure 2; and col. 3, ll. 12-13.
[44] *Id.* at col. 3, ll. 16-18.

a second center frequency to minimize interference between the first and second receive signals. In addition, neither *Katz*, *Yamamoto*, nor *Javor*, either alone or in combination, overcome the shortcomings of *Fuerter*. For these reasons and the reasons noted above with reference to claims 1 and 16, claims 3 and 18 are patentable over the cited reference.

3. None Of The References, Either Alone Or In Combination, Disclose Or Suggest That A Plurality Of Receive Signals Are Translated To Being Centered About Different Center Frequencies And Combined To Form The Composite Signal As Recited In Claims 7 And 22

Claim 7, which depends from claim 1, recites that a plurality of receive signals are translated to being centered about different center frequencies and "combined to form the composite signal." Claim 22, which depends from claim 16, includes similar features. The Appellants submit that none of the references, either alone or in combination, disclose or suggest that a plurality of receive signals are translated to being centered about different center frequencies and combined to form the composite signal. Initially, the Appellants wish to point out that the Patent Office has failed to establish where, exactly, the prior art discloses this feature. Moreover, the Appellants have reviewed the cited references and submit that nowhere, either alone or in combination, do any of the references disclose or suggest this feature. In addition to the reasons noted above with reference to claims 1 and 16, claims 7 and 22 are patentable over the cited references.

F. Conclusion

As set forth above, the cited references do not disclose the feature of receiving a second receive signal different from a first receive signal from a second antenna where the first and second receive signals are centered about a first center frequency. Moreover, as detailed above, the cited references do not disclose all the features recited in the dependent claims. As such, the Appellants request that the Board reverse the Examiner and instruct the Examiner to allow the claims.

Respectfully submitted,

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(8) CLAIMS APPENDIX

1. A method for combining signals for transmission between masthead electronics and base housing electronics in a base station environment, the method comprising:

a) receiving a first receive signal centered about a first center frequency from a first antenna;

b) receiving a second receive signal that is different from the first receive signal and centered about the first center frequency from a second antenna;

c) translating the first receive signal from the first antenna to being centered about a second center frequency; and

d) combining the first receive signal centered about the second center frequency and the second receive signal to form a composite signal, which is sent to the base housing electronics over a feeder cable.

2. The method of claim 1 wherein the first receive signal centered about the second center frequency is combined with the second receive signal centered about the first center frequency to form the composite signal.

3. The method of claim 2 wherein the first center frequency and the second center frequency are sufficiently spread to minimize interference between the first and second receive signals in the composite signal.

4. The method of claim 1 further comprising translating the second receive signal from the second antenna to being centered about a third center frequency, wherein the first receive signal centered about the second center frequency is combined with the second receive signal centered about the third center frequency to form the composite signal.

5. The method of claim 4 wherein the second center frequency and the third center frequency are sufficiently spread to minimize interference between the first and second receive signals in the composite signal.

6. The method of claim 1 wherein the second antenna is a main antenna also used to transmit signals centered about the first center frequency and the first antenna is a diversity antenna associated with the second antenna, the method further comprising transmitting a transmit signal via the main antenna.

7. The method of claim 1 wherein a plurality of receive signals, including the second receive signal, are received and translated to being centered about different center frequencies and combined to form the composite signal.

8. The method of claim 1 further comprising:

a) separating the first and second receive signals from the composite signal in the base station electronics; and

b) providing the first and second receive signals to transceiver circuitry.

9. The method of claim 8 further comprising translating the first receive signal to being centered about the first center frequency prior to providing the first receive signal to the transceiver circuitry.

10. The method of claim 9 wherein the second receive signal is translated to a third center frequency before being combined with the first receive signal to form the composite signal, and further comprising translating the second receive signal to being centered about the first center frequency prior to providing the second receive signal to the transceiver circuitry.

11. The method of claim 1 wherein the first and second receive signals correspond to a cellular signal transmitted from a cellular communication device.

12. The method of claim 1 wherein the first and second antennas are associated with one of a plurality of sectors for the base station environment.

13. The method of claim 12 wherein each sector uses one feeder cable between the masthead electronics and the base housing electronics.

14. The method of claim 1 wherein the first center frequency is associated with a first cellular band and a fourth center frequency is associated a second cellular band, the method further comprising:

a) receiving a third receive signal centered about a third center frequency from the first antenna;

b) receiving a fourth receive signal centered about the third center frequency from the second antenna;

c) translating the third receive signal from the first antenna to being centered about a fourth center frequency; and

d) combining the third receive signal centered about the third center frequency and the second receive signal to form at least part of the composite signal, which is sent to the base housing electronics over the feeder cable.

15. The method of claim 14 further comprising translating the fourth receive signal from the second antenna to being centered about the fourth center frequency, wherein the third receive signal centered about the fourth center frequency is combined with the fourth receive signal centered about the fourth center frequency to form at least part of the composite signal.

16. Base station electronics for combining signals for transmission between a masthead and a base housing in a base station environment, the base station electronics comprising in the masthead:

a) a first input adapted to receive a first receive signal centered about a first center frequency from a first antenna;

b) a second input adapted to receive a second receive signal that is different from the first receive signal and centered about the first center frequency from a second antenna;

c) first translation circuitry adapted to translate the first receive signal from the first antenna to being centered about a second center frequency; and

d) combining circuitry adapted to combine the first receive signal centered about the second center frequency and the second receive signal to form a composite signal, which is sent to base housing electronics over a feeder cable.

17. The base station electronics of claim 16 wherein the first receive signal centered about the second center frequency is combined with the second receive signal centered about the first center frequency to form the composite signal.

18. The base station electronics of claim 17 wherein the first center frequency and the second center frequency are sufficiently spread to minimize interference between the first and second receive signals in the composite signal.

19. The base station electronics of claim 16 further comprising second translation circuitry adapted to translate the second receive signal from the second antenna to being centered about a third center frequency, wherein the first receive signal centered about the second center frequency is combined with the second receive signal centered about the third center frequency to form the composite signal.

20. The base station electronics of claim 19 wherein the second center frequency and the third center frequency are sufficiently spread to minimize interference between the first and second receive signals in the composite signal.

21. The base station electronics of claim 16 wherein the second antenna is a main antenna also used to transmit signals centered about the first center frequency, and the first antenna is a diversity antenna associated with the second antenna, the base station electronics further comprising circuitry adapted to transmit a transmit signal via the main antenna.

22. The base station electronics of claim 16 wherein a plurality of receive signals, including the second receive signal, are received and translated to being centered about different center frequencies and combined to form the composite signal.

23. The base station electronics of claim 16 further comprising in the base housing:

a) transceiver circuitry; and

b) separation circuitry adapted to separate the first and second receive signals from the composite signal in the base station electronics, wherein the first and second receive signals are provided to transceiver circuitry.

24. The base station electronics of claim 23 further comprising, in the base housing, second translation circuitry adapted to translate the first receive signal to being centered about the first center frequency prior to providing the first receive signal to the transceiver circuitry.

25. The base station electronics of claim 24 wherein the second receive signal is translated to a third center frequency before being combined with the first receive signal to form the composite signal, and further comprising third translation circuitry adapted to translate the second receive signal to being centered about the first center frequency prior to providing the second receive signal to the transceiver circuitry.

26. The base station electronics of claim 16 wherein the first and second receive signals correspond to a cellular signal transmitted from a cellular communication device.

27. The base station electronics of claim 16 wherein the first and second antennas are associated with one of a plurality of sectors for the base station environment.

28. The base station electronics of claim 27 wherein each sector uses one feeder cable between the masthead and the base housing.

29. The base station electronics of claim 16 wherein the first center frequency is associated with a first cellular band and a fourth center frequency is associated a second cellular band; a third receive signal centered about a third center frequency is received via the first input from the first antenna; a fourth receive signal centered about the third center frequency is received via the second input from the second antenna, the base station electronics in the masthead further comprising second translation circuitry adapted to translate the third receive signal from the first antenna to being centered about a fourth center frequency, the combining circuitry further adapted to combine the third receive signal centered about the third center frequency and the

second receive signal to form at least part of the composite signal, which is send to the base housing over the feeder cable.

30. The base station electronics of claim 29 further comprising third translation circuitry adapted to translate the fourth receive signal from the second antenna to being centered about the fourth center frequency, wherein the third receive signal centered about the fourth center frequency is combined with the fourth receive signal centered about the fourth center frequency to form at least part of the composite signal.

31. A system for combining signals for transmission between masthead electronics and base housing electronics in a base station environment, the method comprising:

a) means for receiving a first receive signal centered about a first center frequency from a first antenna;

b) means for receiving a second receive signal that is different from the first receive signal and centered about the first center frequency from a second antenna;

c) means for translating the first receive signal from the first antenna to being centered about a second center frequency; and

d) means for combining the first receive signal centered about the second center frequency and the second receive signal to form a composite signal, which is sent to the base housing electronics over a feeder cable.

(9) EVIDENCE APPENDIX

The Appellants rely on no evidence, thus this appendix is not applicable.

(10) RELATED PROCEEDINGS APPENDIX

As there are no related proceedings, this appendix is not applicable.